Solutions to EA-2(B) Examination
Spring, 2005

Question 1

The Notice of Intent to Terminate must be provided to all affected parties other than the PBGC. See ERISA regulation 4041.21(a)(1).

Answer is B.

Question 2

Plans that are permissively aggregated in order to satisfy the coverage rules of IRC section 410(b) must also be aggregated in order to satisfy the non-discrimination rules of IRC section 401(a)(4). See IRC regulation 1.401(a)(4)-9(a).

Answer is B.

Question 3

The highest consecutive three-year average compensation for Smith is $5,333.33, an average of calendar years 2002 through 2004. IRC section 415(b)(4) allows for the use of $10,000 as the maximum benefit payable under IRC section 415 provided that Smith has never participated in a defined contribution plan of the employer, a condition satisfied since the employer has never maintained any other plan.

IRC sections 415(b)(2)(A) and (B) provide that the annual benefit under IRC section 415 must be adjusted if the form of benefit elected is other than a life annuity or a qualified joint and survivor annuity. The $10,000 benefit is not adjusted for form of benefit in any case and can be paid as an annual benefit.

Answer is A.

Question 4

IRC section 415(b)(2)(C) provides that the dollar limitation of IRC section 415(b)(1)(A) is adjusted due to retirement prior to age 62. The compensation limit of IRC section 415(b)(1)(B) is **not** adjusted for an early retirement age. In addition, the dollar limitation is adjusted using a 5% interest rate, not the applicable interest rate. See IRC section 415(b)(2)(E)(i).

Answer is B.

Question 5

Smith is considered a 1% owner under IRS regulation 1.416-1 (Q&A T-16(a)) since he owns more than 1% of the equity interest in the unincorporated business. In addition, Smith is a key employee for 2005 since he earned more than $150,000 in 2004 (the year prior to 2005). See IRC section 416(i)(1)(A)(iii).

Answer is A.

Question 6

The top-heavy vesting schedule applies to all participants in a top-heavy plan. There are no exclusions under IRC section 416 for participants who currently work less than 1,000 hours.

Answer is B.

Question 7

IRC section 414(l)(2)(A)(ii) requires that an applicable percentage of excess assets be provided to each plan being spun off. This applicable percentage is detailed in IRC section 414(l)(2)(B). There is no option to avoid this allocation method by fully vesting the participants in the spun off plan.

Answer is B.

Question 8

Each benefit for Mr. and Mrs. Smith is guaranteed by the PBGC. The fact that the total benefit of $5,900 payable to Mr. Smith exceeds the PBGC maximum guaranteeable benefit of $3,801.14 for 2005 is irrelevant, since the maximum applies to each individual participant.

Answer is A.

Question 9

ERISA regulation 4022.2 provides a definition of "benefit increase." The last sentence of this definition makes it clear that an increase in benefit solely due to advancement in age or service will not be treated as a "benefit increase" for purposes of the guaranteed benefit phase-in rules.

Answer is B.

Question 10

IRC section 4980(a) provides for the payment of a 20% excise tax upon reversion of assets from a qualified plan. IRC section 4980(d)(2) defines a qualified replacement plan as a plan covering at least 95% of the employees that formerly participated in a terminating defined benefit plan, and which receives at least 25% of the excess assets from the defined benefit plan. IRC section 4980(d)(1)(A) indicates that in creating the qualified replacement plan, the excise tax remains at 20% rather than being increased to 50% There is no provision allowing for the excise tax to be waived.

Answer is B.

Question 11

IRC section 4975(e)(2)(A) provides that a fiduciary is a disqualified person, and IRC section 4975(e)(2)(B) provides that a person providing services to a plan is a disqualified person. IRC section 4975(e)(2)(F) provides that a member of the family of either of these two categories is also a disqualified person. IRC section 4975(e)(6) indicates that spouses are considered family members.

Answer is A.

Question 12

Joint Board regulations 901.31(a) and 901.13(f)(1)(iii) indicate that willful failure of an actuary to file a personal U.S. income tax return would be grounds for suspension or termination of an individuals rights as an enrolled actuary.

Answer is A.

Question 13

ERISA regulation 4006.5(f)(3) indicates that the PBGC premium is pro-rated up to the date of the distribution of assets in a plan termination. Therefore, the PBGC premium for 2004 should be pro-rated through 8/15/2004.

Answer is B.

Question 14

For plans with over 500 participants, the estimated flat premium of $19 per estimated participant is due at the end of the second month of the plan year. The correct premium based upon the final participant count of 913 is $17,347 (913 × $19). Since this exceeds the estimated premium paid, there is a late interest charge payable to the PBGC, but no late payment penalty. See ERISA regulation 4007.7(a).

Answer is A.

Question 15

Statement I: A decrease in an early retirement subsidy is considered a significant reduction in future benefit accruals subject to the notice requirement of ERISA section 204(h). See IRS regulation 54.4980F-1, Q&A 1.

Statement II: Posting a participant notice in the workplace is not considered to be an acceptable delivery method according to IRS regulation 54.4980F-1, Q&A 13(a).

Statement III: Notices only need to be provided to participants or alternate payees whose rate of future benefit accrual is reasonably expected to be significantly reduced. Notices need not be provided to participants not affected by the reduction. See IRS regulation 54.4980F-1, Q&A 10(b).

Answer is B.

Question 16

A year of vesting service must be credited for any year in which a participant works at least 1,000 hours (IRC section 411(a)(5)(A)). Smith has worked 1,000 hours or more in 1991, 1992, 1998, and 2005. Years of service prior to age 18 may be excluded (IRC section 411(a)(4)(A)), allowing the exclusion of 1991 service.

Years of service can be excluded prior to 5 consecutive years of breaks-in-service (IRC section 411(a)(6)(D)) in the case of a non-vested participant. A break-in-service occurs in any year for which 500 or fewer hours are worked (IRC section 411(a)(6)(A)). Smith has 5 consecutive years of breaks-in-service from 2000 through 2004. Under either minimum required vesting schedule of IRC section 411(a)(2), Smith would be non-vested. However, for years of maternity leave, normal hours of service must be credited (IRC section 411(a)(6)(E)(ii)). That would exceed 500 hours for 2000, so Smith actually only has 4 consecutive years of breaks-in-service. All prior years of service must be used to determine vesting for 2005.

Therefore, years of service for vesting as of 12/31/2005 would be 1992, 1998, and 2005, a total of 3 years.

Answer is C.

Question 17

The benefit formula clearly does not satisfy the 133⅓% rule under IRC section 411(b)(1)(B), since the second level of benefit of $300 exceeds the initial level of benefit of $200 by more than 133⅓%. Therefore, satisfaction will need to comply with the 3% rule of IRC section 411(b)(1)(A). Under this method, the accrued benefit each year must be at least 3% of the total retirement benefit, multiplied by years of accrual service (in this case, plan participation).

For a participant with 30 years of plan participation, the total benefit would be:

($200 × 10 years) + ($300 × 10 years) + ($X × 10 years) = $5,000 + $10X

3% of this amount is: 3% × ($5,000 + $10X) = $150 + $.3X

This must equal at least the $200 accrual for each of the first 10 years.

$150 + $.3X = $200 ⇒ X = 166.67

Answer is C.

Question 18

The retirement age of Smith is 58, so the plan formula benefit must be reduced by 6% for each of the 7 years that retirement precedes age 65. This is a 42% reduction in benefit.

Plan benefit at early retirement age = $190,000 × 58% = $110,200

This benefit is subject to the limitations of IRC section 415(b). The benefit is limited to the smaller of the annual dollar limit for 2005 of $170,000 (as adjusted for retirement prior to age 62) or the compensation limit (100% of the high consecutive 3-year average salary, which is not adjusted for retirement prior to age 62). There is not enough information to determine the compensation limit.

The dollar limitation is first reduced for years of plan participation less than 10 at the time of termination of employment. Smith has only 8 years of plan participation. The reduced dollar limitation is:

$170,000 × 8/10 = $136,000

The dollar limit must further be reduced from age 62 to age 58 using two sets of assumptions – first using the plan's tabular early retirement factors, and then actuarially using the applicable mortality table of IRC section 417(e) and an interest rate of 5%. The dollar limit is equal to the smaller of these two reduced amounts. (See Revenue Ruling 98-1, Q&A7.)

The plan's tabular early retirement factors are to be applied to benefits from age 65 back to an earlier age. Therefore, in applying the factors, the benefit of $136,000 must first be increased (using the factors) to age 65, and then reduced for 7 years back to age 58. The reduced dollar limit using the plan's tabular factors is:

$136,000 × .58/.82 = $96,195

The given factors based upon the applicable mortality table and a 5% interest rate are to be used in a similar manner. The reduced dollar limit using these factors is:

$136,000 × .5776/.7821 = $100,439

The smaller of these is the overall dollar limit, $96,195. That is the amount of the benefit payable to Smith since it is less than the plan's annual benefit.

Answer is C.

Question 19

ERISA section 4050 provides rules for calculating the designated benefit payable to the PBGC for missing participants upon plan termination. The PBGC must be provided enough plan assets such that there will be enough money to pay for the most valuable benefit that the participant could elect. In addition, if that benefit is an annuity, an additional $300 must be paid to the PBGC by the plan to cover administrative expenses (ERISA regulation 4050.2, section (5) of the definition of missing participant annuity assumptions). Lump sums in excess of $5,000 must be calculated using plan assumptions, and annuities must be valued using PBGC assumptions.

In this question, all values exceed $5,000, so the missing participant lump sum values are irrelevant. For Smith, the greatest value is the plan lump sum value of $11,000. For Jones, the greatest value is also the plan lump sum value. However, since the plan does not allow elective lump sum distributions in excess of $25,000, the annuity value of $26,000 (plus $300) must be used. For Brown, the greatest value is the annuity value of $24,000 (plus $300).

Therefore, the total designated benefit is:

$11,000 + $26,300 + $24,300 = $61,600

Answer is D.

Question 20

ERISA regulation 4006.5(a)(5) provides for an exemption from the variable portion of the PBGC premium for plans that are at the full funding limitation. This exemption is satisfied if the plan sponsor makes a contribution for the prior year by the due date of the PBGC premium (for the current year) at least as large as the full funding limitation. Under IRC section 412(c)(7), the full funding limitation is the greater of the ERISA limit or the RPA'94 limit.

The ERISA limit is:

(Actuarial accrued liability + Normal cost – Smaller of actuarial or market value of assets (reduced by the credit balance)), all increased by valuation interest to the end of the year.

(5,000,000 + 200,000 – (4,400,000 – 100,000)) × 1.08 = $972,000

The RPA'94 limit is:

(Current liability + Expected increase in current liability for the year) × 90%, increased by current liability interest to the end of the year – (Actuarial value of assets (**not reduced** by the credit balance)), increased by valuation interest to the end of the year.

[(7,000,000 + 300,000) × 90% × 1.0655] – (4,500,000 × 1.08) = $2,140,335

The overall full funding limitation is $2,140,335. This can be reduced by the credit balance:

$2,140,335 – ($100,000 × 1.08) = $2,032,335

Answer is B.

Note: See PBGC Technical Update 00-04 for examples of the application of the full funding limitation exemption.

Question 21

IRS regulation 1.410(b)-5(b) defines the average benefit percentage, and IRS regulation 1.410(b)-5(d) describes calculation of the individual benefit percentages. In general, all plans of the employer must be aggregated for the determination of the average benefit percentage (see IRS regulation 1.410(b)-7(e)). Therefore, Plans A and B must be aggregated. Since the two plans have different plan years, the plan years taken into account for the 2005 calendar year average benefit percentage is the plan year ending in 2005 for each plan. For Plan B, that would be the plan year ending 6/30/2005.

The numerator of the average benefit percentage fraction is the ratio of the total benefit percentages of the NHCEs to the total number of non-excludable NHCEs (including those not benefiting). In this case, there are 100 NHCEs benefiting in Plan A, 100 NHCEs benefiting in Plan B, and 50 additional non-benefiting NHCEs, for a total of 250 non-excludable NHCEs.

The denominator of the average benefit percentage fraction is the ratio of the total benefit percentages of the HCEs to the total number of non-excludable HCEs (including those not benefiting). In this case, there are 10 HCEs benefiting in Plan A, 20 HCEs benefiting in Plan B, and 5 additional non-benefiting HCEs, for a total of 35 non-excludable HCEs.

$$\text{Average benefit percentage} = \frac{[(100)(1.25) + (100)(1.5)]/250}{[(10)(1.5) + (20)(2)]/35} = 70\%$$

Answer is B.

Question 22

IRC section 414(q) states that a highly compensated employee in 2005 either owns more than 5% of a corporation in the current or prior year (2004 or 2005 in this case) or earns more than $90,000 in the prior year (2004 in this case). Only Jones owns more than 5% in either year, and only Brown earned more than $90,000 in 2004. They are the only HCEs during 2005.

Answer is A.

Question 23

Mandatory employee contributions are converted to accrued benefits under the rules of IRC section 411(c)(2)(C). First, the mandatory employee contributions must be accumulated using 120% of the Federal Mid-Term Rate each year through 12/31/2004, as follows.

Accumulation of 2001 contribution = $50{,}000 \times .05 \times 1.054 \times 1.0412 \times 1.0423 = 2{,}860$
Accumulation of 2002 contribution = $55{,}000 \times .05 \times 1.0412 \times 1.0423 = 2{,}984$
Accumulation of 2003 contribution = $60{,}000 \times .05 \times 1.0423 = 3{,}127$
Accumulation of 2004 contribution = $65{,}000 \times .05 = 3{,}250$

Total accumulated employee contributions as of 12/31/2004:
$2{,}860 + 2{,}984 + 3{,}127 + 3{,}250 = 12{,}221$

This is accumulated to retirement age 65, and converted to a life annuity using the 30-year Treasury rate and the applicable mortality table (also equal to the lump sum actuarial equivalence factors). As of 12/31/2004, this is based upon the December, 2003 rate, and as of 1/1/2005, this is based upon the December, 2004 rate. The result is the equivalent benefit attributable to mandatory contributions.

As of 12/31/2004: $12{,}221 \times 1.0507^{21} \div 11.72 = 2{,}946$
As of 1/1/2005: $12{,}221 \times 1.0625^{21} \div 10.65 = 4{,}099$

The plan accrued benefit as of 12/31/2004 is:
$[(55{,}000 + 60{,}000 + 65{,}000)/3] \times .015 \times 4$ years of service $= 3{,}600$

The vested percentage after 4 years of service is 40%. Only the portion of the accrued benefit that is attributable to the employer contributions is subject to the vesting schedule. The portion attributable to the mandatory employee contributions is fully vested.

12/31/2004 vested accrued benefit = $2{,}946 + [(3{,}600 - 2{,}946) \times 40\%] = 3{,}208$
1/1/2005 vested accrued benefit = 4,099

Note that the vested accrued benefit must be at least as large as the benefit attributable to mandatory contributions.

The difference between the 1/1/2005 and 12/31/2004 vested accrued benefits is:
$4{,}099 - 3{,}208 = 891$

Answer is C.

Question 24

Smith's benefit is limited to the smaller of the annual IRC section 415(b) dollar limit for 2005 of $170,000 (as adjusted for retirement prior to age 62) or the compensation limit (100% of the high consecutive 3-year average salary, which is not adjusted for retirement prior to age 62). The compensation limit is clearly $107,000.

The dollar limit must be reduced from age 62 to age 55 (Smith's retirement age) using two sets of assumptions – first using the plan's tabular early retirement factors, and then actuarially using the mandated mortality table of IRC section 417(e) and an interest rate of 5%. The dollar limit is equal to the smaller of these two reduced amounts. (See Revenue Ruling 98-1, Q&A7.)

The plan's tabular early retirement factors are to be applied to benefits from age 65 back to an earlier age. Therefore, in applying the factors, the benefit of $170,000 must first be increased (using the factors) to age 65, and then reduced for 10 years back to age 55. The reduced dollar limit using the plan's tabular factors is:

$\$170{,}000 \times .525/.82 = \$108{,}841$

The adjusted dollar limit based upon the mandated mortality table and a 5% interest rate is adjusted actuarially from age 62 to age 55. Since there is no subsidized pre-retirement death benefit, the discounting incorporates both interest and pre-retirement mortality. The reduced dollar limit using the mandated assumptions is:

$\$170{,}000 \times 12.67 \times .9665 \times v^{7}_{@5\%} \div 14.57 = \$101{,}541$

The smaller of these is the overall dollar limit, $101,541. That is the maximum amount of the benefit payable to Smith since it is less than the compensation limit.

Answer is D.

Note that Smith has more than 10 years of both plan participation and service, so there is no need to further reduce the IRC section 415 limits.

Question 25

All plans of the same employer that have a key employee as a participant must be aggregated for purposes of top-heavy determination (see IRC section 416(g)(2)(A)(I)(i)). Since the plan for each of the two locations has a top-heavy ratio on its own that exceeds 0%, each of these plans must have at least one key individual. Therefore, the plans must be aggregated, and the top heavy ratios that must be used to answer this question are the ratios equal to the total from both plans.

A plan (or in this case aggregation group) is top heavy for a year if the top-heavy ratio is greater than 60% (see IRC section 416(g)(2)(B)). Based upon the data provided, the plans are top-heavy for the years 1998, 1999, 2000, and 2004. Each plan must provide a top-heavy minimum benefit accrual of 2% of the highest 5 consecutive years of average compensation per year of top-heavy participation. The accrued benefit for each participant is equal to the greater of the plan formula accrued benefit and the 2% top-heavy minimum.

Smith
Plan benefit = (1.25% × $30,000 × 5 years) + (0.75% × $30,000 × 2 years) = $2,325
Top-heavy minimum = 2% × $30,000 × 4 years of top heavy participation = $2,400
Overall accrued benefit = $2,400
Note that Smith has 7 years of plan participation since the plan for Location 1 did not become effective until 1/1/1998.

Brown
Plan benefit = $400 × 3 years = $1,200
Top-heavy minimum = 2% × $25,000 × 1 year of top heavy participation = $500
Overall accrued benefit = $1,200
Note that it should be assumed that Brown enters the plan upon hire, per the general conditions of the exam.

Total accrued benefits = $2,400 + $1,200 = $3,600

Answer is B.

Question 26

Under the Alternative Calculation Method, the PBGC variable premium is calculated by first determining the difference between the adjusted value of vested benefits under current liability assumptions as of the first day of the prior year and the adjusted value of plan assets as of the first day of the prior year. The difference is then increased with interest for one year using the current year PBGC required interest rate. The result is then rounded up to the next thousand dollars, and multiplied by .9%.

In this question, the current liability is provided from the 2004 Schedule B for each of the following categories of participants: retired, terminated vested, and active. It should be assumed that these are as of the first day of the 2004 year as no valuation date is given, and this is a general condition of the exam.

The adjustment factor for retired participants is: $.94^{(RIR - BIR)}$

The adjustment factor for the active and terminated participants is:

$.94^{(RIR - BIR)} \times ((100 + BIR)/(100 + RIR))^{(ARA - 50)} \times 1.07$

In the above formulas, RIR is the required interest rate for the current PBGC premium year (2005), BIR is the current liability interest rate for the previous PBGC premium year (2004), and ARA is the assumed retirement age. Note that the 7% increase for the active and terminated participants represents an estimate of the increase in accrued benefit for the year (in this case the 2004 year).

The adjusted value of vested benefits for the retired participants as of 1/1/2004 is:

$400{,}000 \times .94^{(5.00 - 6.55)} = 440{,}263$

The adjusted value of vested benefits for the non-retired participants as of 1/1/2004 is:

$(600{,}000 + 2{,}000{,}000) \times .94^{(5.00 - 6.55)} \times (106.55/105.00)^{(63 - 50)} \times 1.07 = 3{,}704{,}614$

The adjusted value of plan assets must be determined as of 1/1/2004 by subtracting contributions receivable and adding back all contributions for each year prior to the current year, each discounted with interest at the PBGC required interest rate from the date they were deposited to 1/1/2004. Note that the given asset value includes the receivable contribution for 2003. Since no contribution information is provided for 2004, it must be assumed that none were made, and there are no contributions added back for that year. The adjusted value of the plan assets (using actuarial value of assets) is:

$1{,}900{,}000 - 200{,}000 + 200{,}000/1.05^{3.5/12} = 1{,}897{,}174$

Adjusted $UVB_{1/1/2005}$ = (440,263 + 3,704,614 – 1,897,174) × 1.05 = 2,360,088

2005 variable premium = $2,361,000 × .009 = $21,249

Answer is B.

Question 27

I. Actuaries are generally not considered to be plan fiduciaries while performing their regular professional functions such as calculating minimum funding requirements. See ERISA regulation 2509.75-5, Q&A D-1. False.

II. It is allowable for a person or groups of persons to serve in more than one fiduciary capacity with respect to a plan. See ERISA section 402(c)(1). True.

III. Every plan document must provide for one or more named fiduciary. See ERISA section 402(a)(1). False.

Answer is E.

Question 28

IRC regulation 1.401(a)(4)-3(d)(3) provides rules allowing for grouping of accrual rates. Normal accrual rates are allowed to be grouped within a 5% range, and most valuable accrual rates within a 15% range. Each participant with an accrual rate within the appropriate percent of the midpoint of the range is deemed to have an accrual rate equal to the midpoint.

Choosing a midpoint of 2.15% for the normal accrual rate produces a range of 2.0425% (2.15% × .95) through 2.2575% (2.15% × 1.05). Choosing a midpoint of 5.55% for the most valuable accrual rate produces a range of 4.7175% (5.55% × .85) through 6.3825% (5.55% × 1.15). Employees E2 and E4 have rates that fall within this range, so they are treated as having the same normal and most valuable accrual rates.

Answer is D.

Note that there are other midpoints that may work, and that no midpoint will work for any other pair of employees. This can only be determined by trial and error, although once a pair is found (in this case E2 and E4), there is no need to continue.

Question 29

IRS regulation 1.401(a)(4)-5(b)(3) provides for rules restricting certain distributions to the top-25 paid HCEs or former HCEs. Since the employer only has 10 employees, Smith is certainly one of the top 25 paid HCEs. In general, the restricted amount is any amount in excess of a life annuity.

Smith's accrued benefit (payable as a life annuity) can be determined:

AB = 2.5% × $150,000 × 10 years of service = $37,500

The lump sum equivalent that Smith has elected is: $37,500 × 11.87 = $445,125

This lump sum can be paid provided that one of three conditions are met (see IRS regulation 1.401(a)(4)-5(b)(3)(iv)):

1. The value of the plan assets after the distribution is taken is at least equal to 110% of the OBRA'87 current liability that remains after the distribution,
2. The distribution is less than 1% of the OBRA'87 current liability before the distribution, or
3. The distribution does not exceed $5,000.

Option 3 is not met (the distribution exceeds $5,000). In addition, option 2 is not met since 1% of the current liability is also only $5,000.

The first option must be tested. The assets after the proposed distribution would be $179,875 ($625,000 - $445,125). 110% of current liability after the proposed distribution would be $550,000 (($1,000,000 - $500,000) × 1.1). This option also fails.

Clearly, for the first option to be satisfied, the assets after the distribution would need to have a value of at least $550,000, leading one to believe that a distribution of $75,000 might be allowed. However, if Smith were to be paid $75,000 in 2005, that would not completely eliminate his current liability. Since only 16.85% (75,000/445,125) of his lump sum would be paid, it could be reasonably assumed that he still has 83.15% of his current liability remaining. That means that after a proposed distribution of $75,000, 110% of the remaining current liability would be $1,007,325 (($1,000,000 – (16.85% × $500,000)) ×1.1).

This should make it clear that the only distribution option for Smith in 2005 would be to receive the life annuity payment of $37,500.

Answer is A.

Question 30

The maximum guaranteeable benefit is equal to the smaller of the PBGC dollar maximum or the high consecutive 5-year average compensation (see ERISA section 4022(b)(3)). The PBGC dollar maximum for 2004 is $3,698.86 per month. This is smaller than the 5-year average compensation for Jones, but larger than the average monthly compensation of $3,333.33 ($40,000 ÷ 12) for Smith. Therefore, the maximum monthly guaranteeable benefit payable at age 65 in the form of a life annuity is $3,333 for Smith and $3,699 for Jones.

The maximum guaranteeable benefit is adjusted for retirement other than 65 and for forms of benefit other than a life annuity using PBGC adjustment factors. Note that, unlike the IRC section 415(b) maximum, both the PBGC dollar maximum and compensation maximum are adjusted for both form of benefit and retirement age.

Smith has retired at age 60, with a benefit in the normal form for married participants of a joint and 100% survivor annuity. The PBGC factors for the retirement age and form are .65 for retirement age 60, and .80 for the joint and 100% survivor annuity (these can be obtained from ERISA regulation 4022.23 as well as the table of factors provided with the exam). Smith's maximum guaranteeable benefit is:

$3,333 × .65 × .80 = $1,733

Jones has retired at age 63, with a benefit in the normal form for married participants of a joint and 100% survivor annuity. The PBGC factors for the retirement age and form are .86 for retirement age 60, and .80 for the joint and 100% survivor annuity. Jones' maximum guaranteeable benefit is:

$3,699 × .86 × .80 = $2,545

Smith is a non-substantial owner (under the definition of ERISA section 4022(b)(5)(A)) since Smith's ownership percentage does not exceed 10%. Smith is subject to the 5-year phase-in rules of ERISA section 4022(b)(7).

Smith's vested monthly accrued benefit (adjusted using the plan's early retirement factor) under the original plan (which has been in effect for at least 5 years and is not subject to phase-in) is:

2.5% × $40,000 × 25 years of service × .75 ÷ 12 = $1,563

This is fully guaranteed as it is less than the maximum guaranteeable benefit.

Smith's vested monthly accrued benefit (adjusted using the plan's early retirement factor) under the plan amendment effective 1/1/1990 is:

3.0% × $40,000 × 25 years of service × .75 ÷ 12 = $1,875

This must be limited to the maximum guaranteeable benefit of $1,733. The increase in the benefit (after the maximum guarantee benefit limitation) is $170 ($1,733 - $1,563). This is phased in at the rate of 20% for 4 years (the phase in is for each complete year since the later of the effective date or the adoption date of the plan amendment, the adoption date of 7/1/2000 being later in this case).

Phase-in = $170 × 20% × 4 years = $136

Total guaranteed for Smith = $1,563 + $136 = $1,699

Jones is a substantial owner since Jones' ownership percentage exceeds 10%. Jones is subject to the 30-year phase-in rules of ERISA section 4022(b)(5)(B).

Jones' vested monthly accrued benefit (adjusted using the plan's early retirement factor) under the original plan is:

2.5% × $80,000 × 30 years of service × .90 ÷ 12 = $4,500

This must be limited to the maximum guaranteeable benefit of $2,545.

This is phased in over 30 complete years from the effective date of the plan (since Jones was hired before the effective date). Since the adoption date of 2/1/1985 is after the effective date, the adoption date is used. Jones has only 19 complete years of plan participation as of the plan termination date.

Phase-in = $2,545 × 19/30 = $1,612

The increased benefit under the plan amendment will have no effect on the guaranteed benefit, since the benefit for Jones has already been limited to the maximum guaranteeable benefit.

Total guaranteed for Smith and Jones = $1,699 + $1,612 = $3,311

Answer is B.

Question 31

The annual withdrawal liability payment is equal to the product of the highest contribution rate in the past 10 years (ending in the year of withdrawal) and the high consecutive 3-year average of the base units during the 10-year period ending with the year before the year of withdrawal. (See ERISA section 4219(c)(1)(C)(i).)

$$\text{Annual liability payment} = \$3.75 \times \frac{786{,}000 + 810{,}000 + 820{,}000}{3} = 3{,}020{,}000$$

Answer is B.

Question 32

A qualified pre-retirement survivor annuity (QPSA) is payable at the earliest possible retirement age of the plan participant (see IRC section 417(c)(1)(B)). Smith was age 55 with 5 years of service at the date of death. Therefore, the earliest retirement age would be when Smith would have been age 60. Under the 3 to 7 year graded vesting schedule, Smith was 60% vested. Note that there is no requirement to fully vest upon death, unlike attaining normal retirement age under IRC section 411(a)(8).

Smith's vested accrued benefit as of the date of death, with reduction of 6% for 5 years to the earliest possible retirement age of 60:

$\$10{,}000 \times 60\% \times .70 = \$4{,}200$

Since the cost of the benefit is fully subsidized by the employer, it can be converted from the normal form (a life annuity per the general conditions of the exam) to a joint and 50% survivor annuity (the minimum QPSA under IRC section 417(c)(1)(A)). Note that the spouse would be age 60 at the same time that Smith would have become age 60, so the reduction factor would be for joint lives each age 60.

$\$4{,}200 \times .93 = \$3{,}906$

The spouse is entitled to half of this:

$50\% \times \$3{,}906 = \$1{,}953$

Answer is B.

Question 33

The compensation limit under IRC section 415(b)(1)(B) is equal to the high consecutive 3-year average over all years of service with the employer. Compensation to be used is gross compensation (before salary deferrals), and the compensation is not limited by the IRC section 401(a)(17) compensation limit. (Note that there are currently proposed IRC section 415 regulations that would change this, but as of the date of this examination, they had not become effective.) The compensation limit is not adjusted for retirement age prior to age 62.

$$\text{High consecutive 3-year average} = \frac{215{,}000 + 205{,}000 + 195{,}000}{3} = 205{,}000$$

Answer is E.

Question 34

IRS regulation 1.401(l)-5 provides rules regarding overall disparity limits. In particular, when permitted disparity is used in a defined benefit and a defined contribution plan, the combined plans cannot use more than 100% of maximum disparity in any year. Regulation 1.401(l)-5(b) provides rules to determine the annual disparity fraction for each of the defined benefit and the defined contribution plans. The sum of the fractions cannot exceed 1.0.

The defined contribution plan disparity fraction is equal to the ratio of the actual disparity in the defined contribution plan to the maximum disparity that could have been used. Under IRS regulation 1.401(l)-2(b)(2), the maximum disparity is equal to the smaller of the base percentage or 5.7%. In the case of the given defined contribution plan allocation formula, the base percentage is 5%. This is the maximum disparity (since it is less than 5.7%). The actual disparity is 3% (the difference between the excess percent of 8% and the base percent of 5%).

DC disparity fraction = 3%/5% = 0.6

This leaves 0.4 available for the defined benefit plan. IRS regulation 1.401(l)-3(e)(3) provides tables (also provided with the exam) of maximum disparity factors for various retirement ages and social security retirement ages. In addition, a simplified table is provided. Either the social security retirement age (SSRA) tables or the simplified table may be used. If the SSRA tables are used, the worst case situation would be a participant who has an SSRA of 67. Comparing the factor at a retirement age of 62 from the SSRA 67 table with the simplified table, the simplified table yields a higher allowed percentage of 0.52%. This should be used since the question asks for the maximum permitted value. However, this disparity must be adjusted due to the use of 40 years of maximum service, since only 35 years of maximum disparity may be used. A reduction factor of 35/40 must be applied to this disparity, along with the remaining 0.4 factor available for the DB plan.

DB disparity fraction = $X\%/(0.52\% \times 35/40) = 0.4 \quad \Rightarrow \quad X\% = 0.182\%$

Answer is C.

Question 35

IRC section 4980F(b) indicates that there is a $100 per day per participant excise tax for failure to provide disclosure to the affected plan participants in the event of a reduction in future benefit accruals under ERISA section 204(h). Since only the active participants are affected by the plan amendment, they are the only participants for which an excise tax is due.

Excise tax = $\$100 \times 40 \times 51$ days = $204,000

Answer is C.

Question 36

The retirement age of Smith is 66. Smith's benefit is limited to the smaller of the annual dollar limit for 2005 of $170,000 (as adjusted for retirement after age 65) or the compensation limit (100% of the high consecutive 3-year average salary, which is not adjusted for retirement after age 65). The compensation limit is $183,300.

The dollar limit is increased from age 65 to age 66 using two sets of assumptions – first using the plan's actuarial equivalence assumptions, and then using the applicable mortality table of IRC section 417(e) and an interest rate of 5%. The adjusted dollar limit is equal to the smaller of these two reduced amounts. (See Revenue Ruling 98-1, Q&A7.)

Since the plan's pre-retirement death benefit is the qualified pre-retirement survivor annuity, the actuarial adjustment does not take into account forfeiture due to mortality.

The adjusted dollar limit using the plan's equivalence assumptions is:

$$\$170{,}000 \times \ddot{a}_{65}^{(12)} \times 1.055 \div \ddot{a}_{66}^{(12)} = \$170{,}000 \times 11.77 \times 1.055 \div 11.50 = \$183{,}560$$

The adjusted dollar limit using the applicable mortality table and a 5% interest rate is:

$$\$170{,}000 \times \ddot{a}_{65}^{(12)} \times 1.05 \div \ddot{a}_{66}^{(12)} = \$170{,}000 \times 12.25 \times 1.05 \div 11.95 = \$182{,}981$$

The smaller of these is $182,981. This must also be adjusted for form of benefit, using the same two sets of assumptions, with the overall dollar limit being equal to the smaller of the two results. The normal form of benefit under IRC section 415 is a life annuity.

The adjusted dollar limit using the plan's equivalence assumptions is:

$$\$182{,}981 \times \ddot{a}_{66}^{(12)} \div \ddot{a}_{\overline{66:10}|}^{(12)} = \$182{,}981 \times 11.50 \div 12.02 = \$175{,}065$$

The adjusted dollar limit using the applicable mortality table and a 5% interest rate is:

$$\$182{,}981 \times \ddot{a}_{66}^{(12)} \div \ddot{a}_{\overline{66:10}|}^{(12)} = \$182{,}981 \times 11.95 \div 12.48 = \$175{,}210$$

The smaller of these is $175,065.

Answer is B.

Question 37

Each of the situations represents a failure of the enrolled actuary to discharge duties under ERISA.

I. An enrolled actuary is required to use actuarial assumptions and methods that are reasonable. See ERISA regulation 901.20(e)(1).
II. An enrolled actuary is required to provide supplemental information concerning a signed actuarial report, as requested by a plan administrator. See ERISA regulation 901.20(c).
III. An enrolled actuary is required to ensure that calculations are accurate. See ERISA regulation 901.20(e)(2).

Answer is D.

Question 38

Each of the situations are governed by the rules of ERISA regulation 901.20(d). An enrolled actuary can continue to provide services once all parties are notified of the conflict of interest. Only statement II is true, since that is the only statement that indicates that the actuary can continue to provide services.

Answer is C.

Question 39

The benefits of all plans of the employer must be combined for purposes of the average benefit percentage. See IRS regulation 1.410(b)-7(e).

The present value as of 12/31/2004 of Smith's defined benefit accrual increase for 2004 is:

$4{,}000 \times \ddot{a}_{65} \times v_{8.5\%}^{40} = 4{,}000 \times 7.95 \times .0383 = 1{,}217$

The benefit percentage is the sum of the present value of Smith's 2004 accrual and the annual additions to the profit sharing and 401(k) plans, divided by Smith's 2004 compensation.

Benefit percentage = (1,217 + 7,500 + 2,500)/150,000 = 7.478%

Answer is C.

Alternative solution:

Exam general condition number 7 states that annuities are to be paid monthly. Therefore, although the question provides the increase in the benefit in 2004 to be an annual amount, general condition 7 would seem to indicate that it is actually an annual amount payable monthly. Therefore, the given annual annuity due would need to be converted to a monthly annuity due. This (using standard approximations) is:

$\ddot{a}_{65}^{(12)} = \ddot{a}_{65} - 11/24 = 7.95 - 11/24 = 7.4917$

Using this in the above calculations in place of the annual annuity due:

$4{,}000 \times \ddot{a}_{65}^{(12)} \times v_{8.5\%}^{40} = 4{,}000 \times 7.4917 \times .0383 = 1{,}148$
Benefit percentage = (1,148 + 7,500 + 2,500)/150,000 = 7.432%

This still falls within answer range C.

Question 40

I. The top heavy minimum contribution to a defined contribution plan for a non-key employee is 3% of compensation (see IRC section 416(c)(2)(A)). For Smith this is $900 (3% of $30,000). The statement is false.

II. The top heavy minimum accrual in a defined benefit plan for a non-key employee is 2% of the highest consecutive 5-year average compensation (see IRC section 416(c)(1)(B)) for each of the first 10 years of top-heavy plan participation. For Jones this is $1,500 (2% of $75,000). The statement is true.

III. The top heavy minimum for a participant in both a defined benefit and a defined contribution plan (each of which is top heavy) is equal to at least either the 2% defined benefit minimum or a contribution to the defined contribution plan of at least 5% of compensation. See IRS regulation 1.416-1, Q&A M-12. For Brown, the annual accrual must be at least $1,200 (2% of $60,000), or the contribution to the DC plan must be at least $3,000 (5% of $60,000). The statement is true.

Answer is C.

Question 41

The maximum amount that can be transferred from a pension plan to the company's retiree health plan is generally equal to the excess of the actuarial value of assets over the greater of the full funding limitation liability (the actuarial accrued liability) or 125% of the OBRA'87 current liability. (See IRC section 420(e)(3).) However, IRC section 420(b)(3) limits this amount to the estimated benefit claims reasonably expected to be paid during the year.

125% of current liability is 44,375,000 (35,500,000 × 1.25). This is larger than the actuarial accrued liability of 40,000,000. Under IRC section 420(e)(3), the maximum amount that can be transferred is:

45,200,000 – 44,375,000 = 825,000

This must be checked against the expected retiree health benefit payments for 2005. IRC section 420(e)(1)(D) indicates that key employees (who account for 10% of the liabilities and claims for 2005) must be excluded from the computation of the liabilities. It follows that they must also be excluded from the estimated claims as well. Therefore, the total expected claims to be considered for 2005 is:

1,000,000 × .9 = 900,000

IRC section 420(e)(1)(B) indicates that the expected claims must be reduced as a percentage of the funded liabilities. The funded liability percentage for the retiree health plan is:

$$\frac{5{,}000{,}000}{.9 \times 15{,}000{,}000} = .37037$$

Note that the key employees have been removed from the determination of the total liability per IRC section 420(e)(1)(D).

The adjusted estimated health benefit claims for 2005 are:

900,000 × (1 - .37037) = 566,667

This is the solution to the question since it is less than the amount that could be transferred under IRC section 420(e)(3).

Answer is A.